



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,018	10/27/2003	Chi-Hsing Hsu	JCLA11476	4247
23900	7590	06/30/2006		EXAMINER
J C PATENTS, INC. 4 VENTURE, SUITE 250 IRVINE, CA 92618				FARAHANI, DANA
			ART UNIT	PAPER NUMBER
				2891

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/695,018	HSU ET AL.
	Examiner Dana Farahani	Art Unit 2891

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 07 April 2006.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-19 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-19 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA), previously cited, in view of Vinson et al., hereinafter Vinson (US Patent 6,700,794), previously cited.

Regarding claims 1, 2, 7, 8, 12, and 13, AAPA discloses in figure 1A a chip package structure comprising:

a carrier 110 having a surface, a power pad 116 and a ground pad 114, the surface having a die bonding area at the far left, the power pad and the ground pad being on the surface, the power pad and the ground pad being disposed outside the die bonding area;

a die 120 having an active surface and a backside corresponding to the active surface, the backside being attached to the die bonding area on the surface of the carrier, the die having a plurality of die pads 126 on the active surface, and one of the die pads is electrically connected to the power pad or the ground pad via the conductive wire 136; and

at least a passive component 130 disposed between the power pad and the ground pad, the passive component having at least two electrodes 132a and 132b connected to the power pad and ground pad.

AAPA does not disclose at least a first conductive wire having two ends connected to one of the plurality of die pads and one of the electrodes 132a (the die pad is connected to the signal or ground pad via one of the electrodes of the passive component).

Vinson discloses in figure 4a, that the conductive wire 17b shown in the figure is connected to an electrode on a capacitor carrier, which is directly connected to the capacitor, as opposed to connecting the wire directly to a pad on the capacitor, as shown in figure 4, further disclosing the metal layer 34b is directly formed on the capacitor electrode 16b. Although 16b is an adhesive, it is formed as a conductive adhesive intentionally to act as an electrode of the capacitor (see column 6, lines 1-21). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to connect the wire of the AAPA to the pad via the pad therein, in order to reduce the length of the wire, and avoid problems such as wire bending and open circuits that result from long extended wiring in circuit packages.

Regarding claim 3, AAPA discloses a signal pad 118.

Regarding claims 4, 5, 9, and 11, a second conducting wire 138 connected to another one of the plurality of die pads and the signal pad.

Regarding claim 14, AAPA discloses in figure 1A a carrier 110 having a surface, a power pad 116 and a ground pad 114, the surface having a die bonding area 112, the power pad and the ground pad being on the surface, the power pad and the ground pad being disposed outside the die bonding area;

a die 120 having an active surface 124 and a backside 122 corresponding to the active surface, the backside being attached to the die bonding area on the surface of the carrier, the die having a plurality of die pads 126 on the active surface;

at least a passive component 130 disposed between the power pad and the ground pad, the passive component having at least two electrodes 132a and 132b connected to the power pad and the ground pad respectively; and

at least a single first conducting wire 136 having two ends connected to one of the plurality of die pads and one of the electrodes 132a, respectively.

AAPA does not disclose at least a first conductive wire having two ends physically connected to one of the plurality of die pads and one of the electrodes (the die pad is connected to the signal or ground pad via one of the electrodes of the passive component).

Vinson discloses in figure 4a, that the conductive wire 17b shown in the figure is connected to an electrode on a capacitor carrier, which is directly connected to the capacitor, as opposed to connecting the wire directly to a pad on the capacitor, as shown in figure 4, further disclosing the metal layer 34b and its relationship with the capacitor electrode, as discussed above. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to connect the wire of the AAPA to the pad via the pad therein, in order to reduce the length of the wire, and avoid problems such as wire bending and open circuits that result from long extended wiring in circuit packages.

Regarding claims 15 and 16, the carrier comprises a signal pad 118, the signal pad being disposed outside the die bonding area and farther from the die bonding area than the power pad and the ground pad. Also, a second conductive wire 138 having two ends connected to another one of the plurality of die pads and the signal pad.

Regarding claims 17 and 19, AAPA discloses in figure 1A a wire bonding package structure for electrically connecting a die 120 to a carrier 110, the carrier having a surface and a

die bonding area 112 on the surface, the die having an active surface 124 and a backside 122 corresponding to the active surface, the backside of the die being attached to die bonding area, the wire bonding package structure at least comprising:

- a power pad 116 on the surface of the carrier;
- a ground pad 114 on the surface of the carrier;
- a signal pad 118 on the surface of the carrier, the power pad, the ground pad and the signal pad being disposed outside the die bonding area, wherein the signal pad being farther from the die bonding area than the power pad and the ground pad, as can be seen in the figure;
- a passive component 130 disposed between the power pad and the ground pad, the passive component having at least two electrodes 132a and 132b electrically and physically connected to the power pad and the ground pad respectively;
- a plurality of die pads 126 on the active surface of the die;
- a dielectric material over the chip, passive component and the wires (see specification, line 7); and

a second single conducting wire 134 having two ends connected to another one of the die pads and the signal pad respectively, wherein the second conducting wire crossing over the passive component, as can be seen in the figure.

AAPA does not disclose at least a first conductive wire having two ends physically connected to one of the plurality of die pads and one of the electrodes.

Vinson discloses in figure that the conductive wire 17b shown in the figure is connected to an electrode on a capacitor carrier, which is directly connected to the capacitor, as opposed to connecting the wire directly to a pad on the capacitor, as shown in figure 4, further disclosing the

metal layer 34b and its direct contact to the capacitor electrode, as discussed above. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to connect the wire of the AAPA to the pad via the pad therein, in order to reduce the length of the wire, and avoid problems such as wire bending and open circuits that result from long extended wiring in circuit packages.

Regarding claim 18, the passive component is an inductor or a capacitor (see AAPA, paragraph 5, line 18).

Regarding claims 6 and 10, AAPA in view of Vinson substantially discloses the claimed invention, as discussed above, except for the electrodes being Ni, Au or Ni/Au alloy. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to use these materials for in the electrodes of the passive component because of their excellent conductive properties.

Response to Arguments

3. Applicant's arguments with respect to the previously rejected claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dana Farahani whose telephone number is (571)272-1706. The examiner can normally be reached on M-F 9:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister can be reached on (571)272-1722. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

D. Farahani



**B. WILLIAM BAUMEISTER
SUPERVISORY PATENT EXAMINER**